



Three Parameters Plus, Inc. Employee of the Year Steve Reidsma completes yet another jurisdictional field plot near the "G" Valley.

This was Steve's fourth field season on the project.

Pebble Project Wetlands Study

2007 Agency Update

Major Study Components

Delineation

Based on Criteria and Indicators Found in the 1987 Corps Wetland Delineation Manual & 2006 Interim, and very soon – the 2007 Regional Supplement for the Alaska Region.

Classify Wetlands and Assess Their Functions

Magee Rapid Procedure for Assessing Wetland Functional Capacity (HGM Based)

Consider Wetland Values

Incorporate Subsistence, Recreation, Cultural Resource, and Other Values into the Functional Assessment Evaluation

Identify & Evaluate Potential Compensatory Mitigation Projects

Prepare Compensatory Mitigation Plan

Per June 10, 2004 Final Alaska District Compensatory Mitigation Guidelines (or subsequent guidance)



W

@070807193100N5958161W15518123D

8/6/2007

Status Report by Study Component



Field Data
Collection ←

Data QC/
Validation

Line
Drawing

Polygon
Coding

Field
Review

Delineation

Wetlands and Other Waters of the U.S.

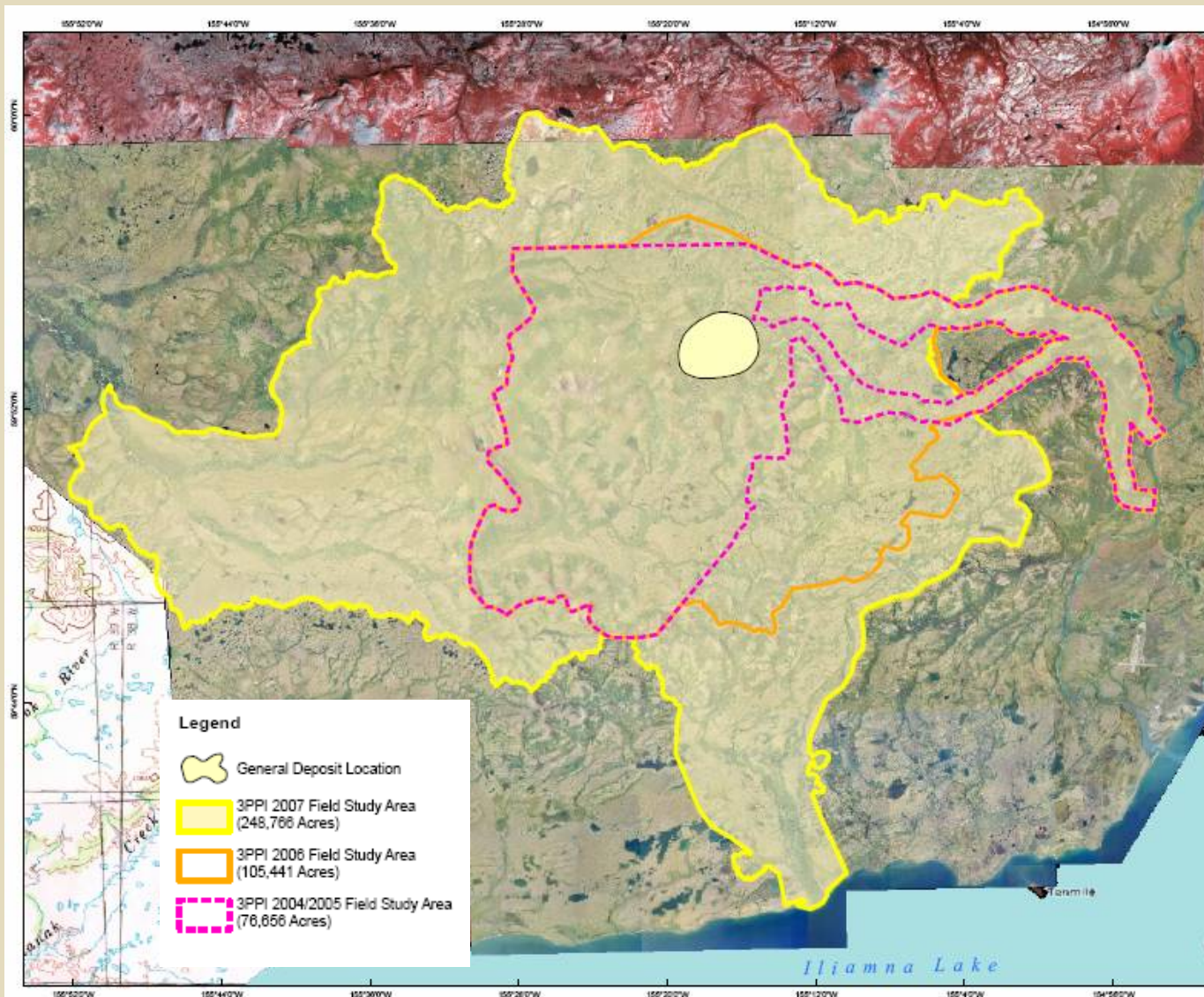


Both the 1987 and 2006 Delineation Methods Were Again Applied Concurrently at Pebble During the 2007 Field Season



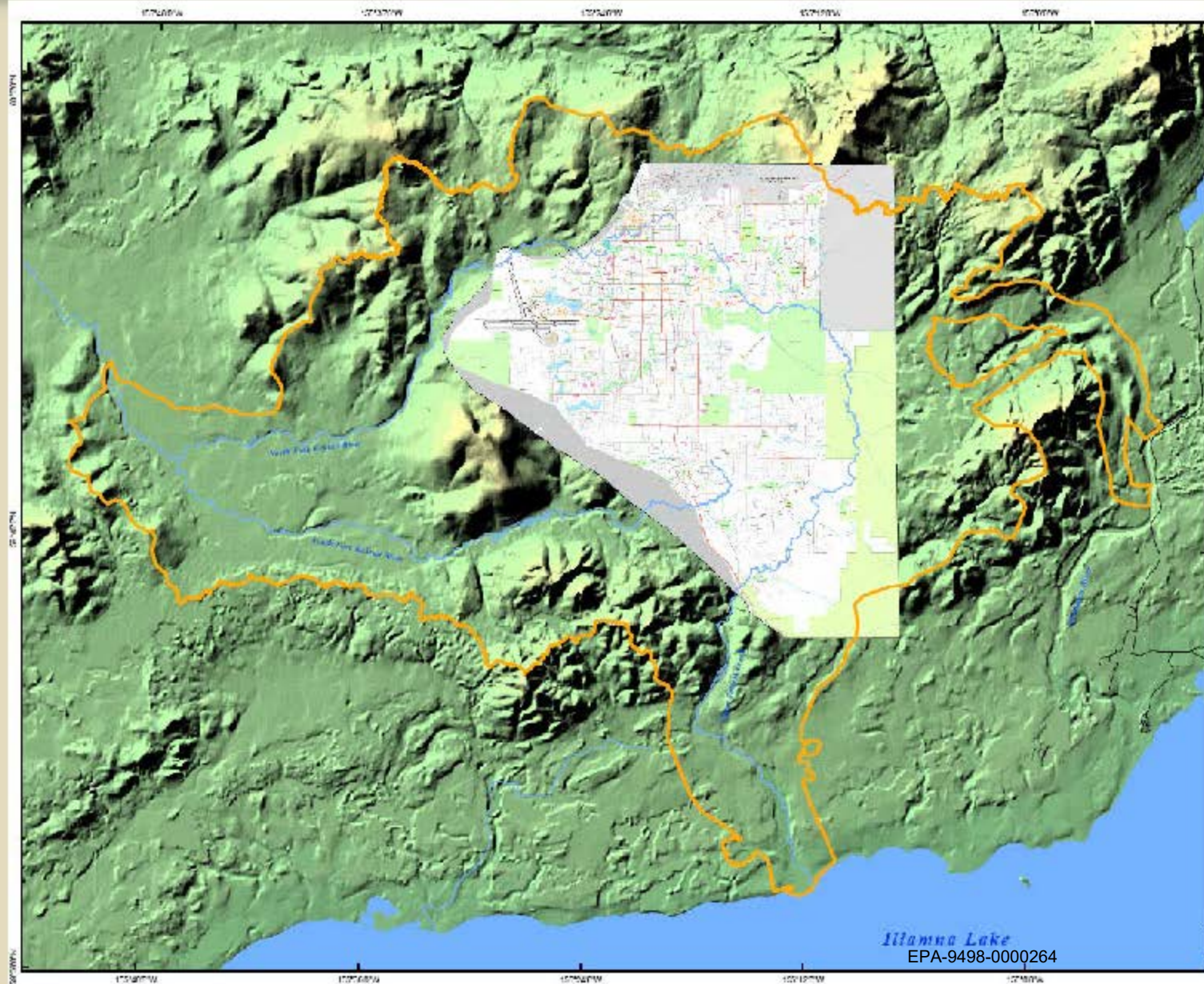
We're still loosing a lot of hair and sleep trying to reconcile the two methods and get all the data needed. If that wasn't enough of a challenge...

Greg Everetts, Ottertail Environmental, working in the Wiggly Lake Area



In early 2007, the Wetlands Study Area doubled in size over that of our 2006 Study Area -- more than four times the size of our original 2004 Study Area (a mere 66,000 acres...).

To put this in perspective for you – here's the Anchorage Bowl superimposed over our 2007 Wetlands Study Area Boundary.





So, it was time to call for reinforcements





Three Parameters + *Pebble Wetland Boot Camp*



EPA-9498-0000266



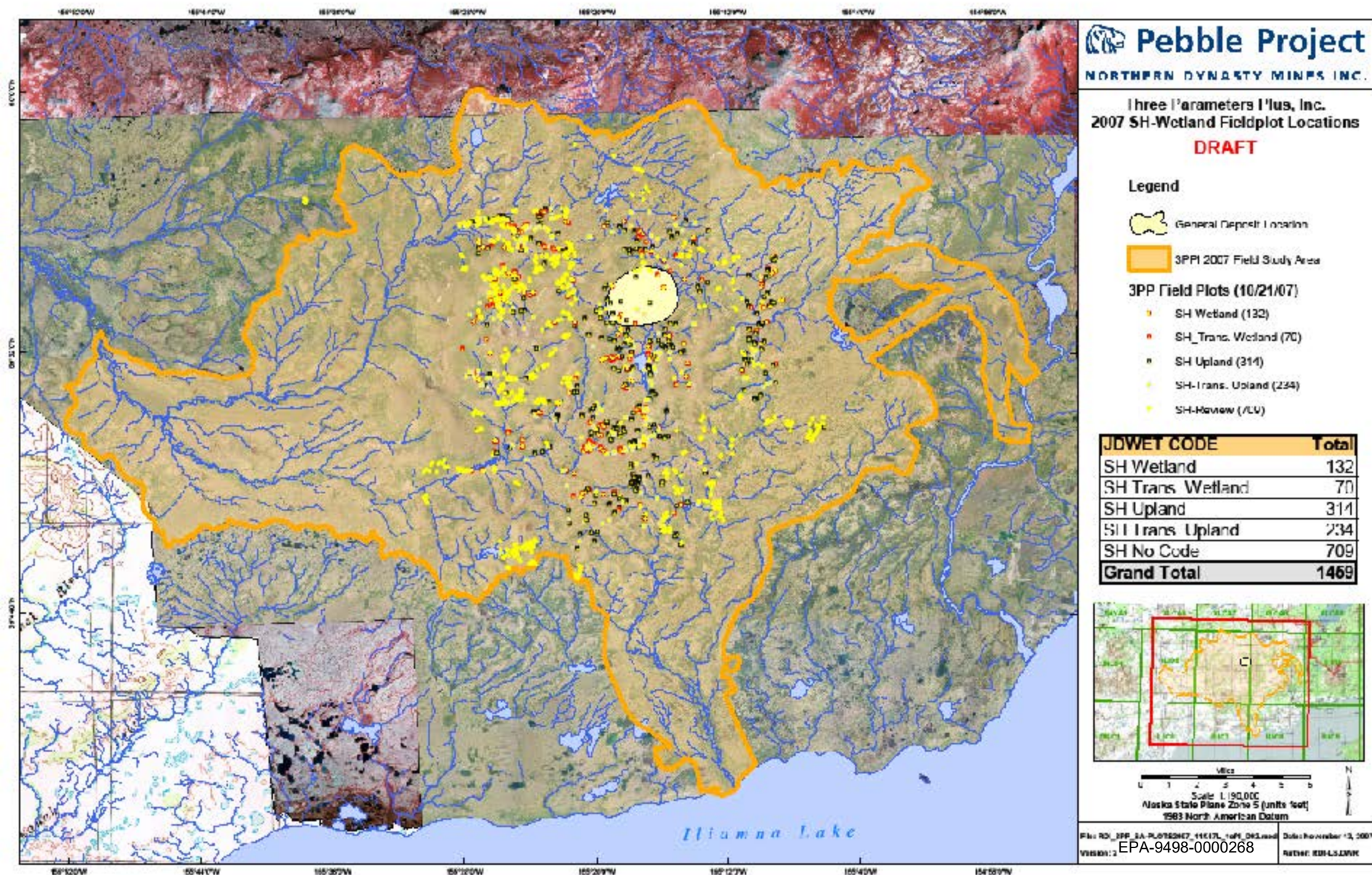
Shrubs, Shrubs, Always More Shrubs!





Three Parameters +

Natural Resource Consulting





Keep Digging!



@070624175510N5951102W15511467G

6/24/2007 9:59am



7355W15521418G



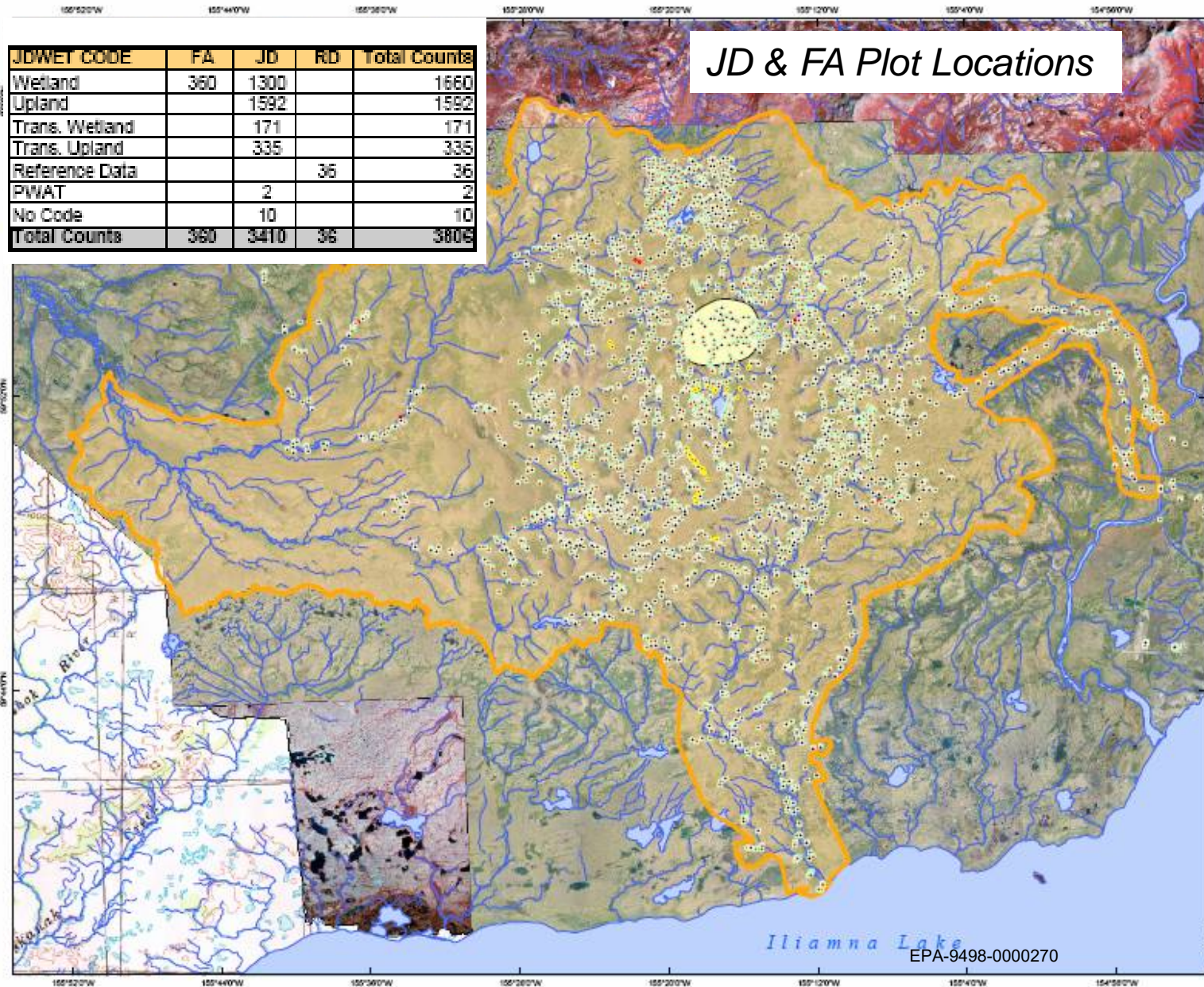
EPA 9498-0000269

Three Parameters +

Natural Resource Consulting

In addition to the 1,459 rapid shrub height assessments, mine site crews have also completed 3,806 full jurisdictional determinations or stand alone functional assessments.

This brings the number of holes dug and photographed to over 5,000.

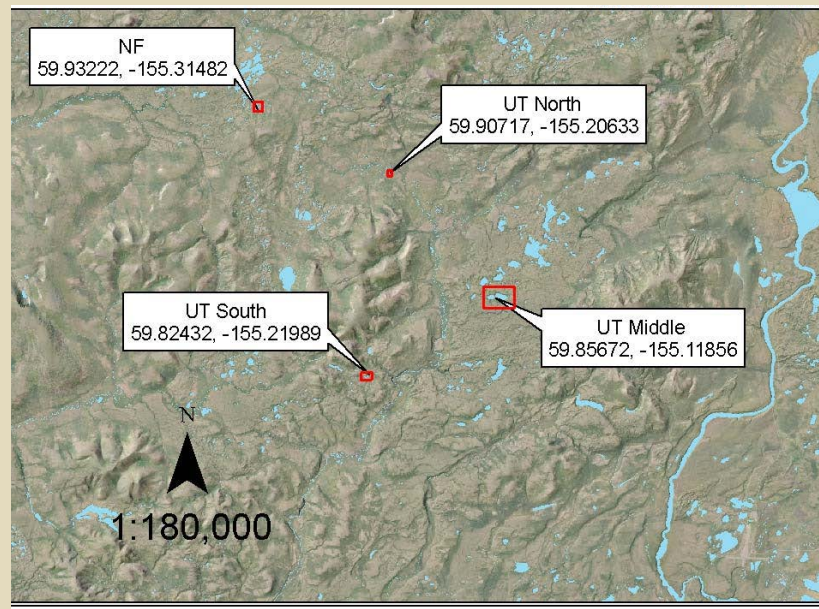


And you can't go far at Pebble without finding some water...





Or Somebody talking about it...



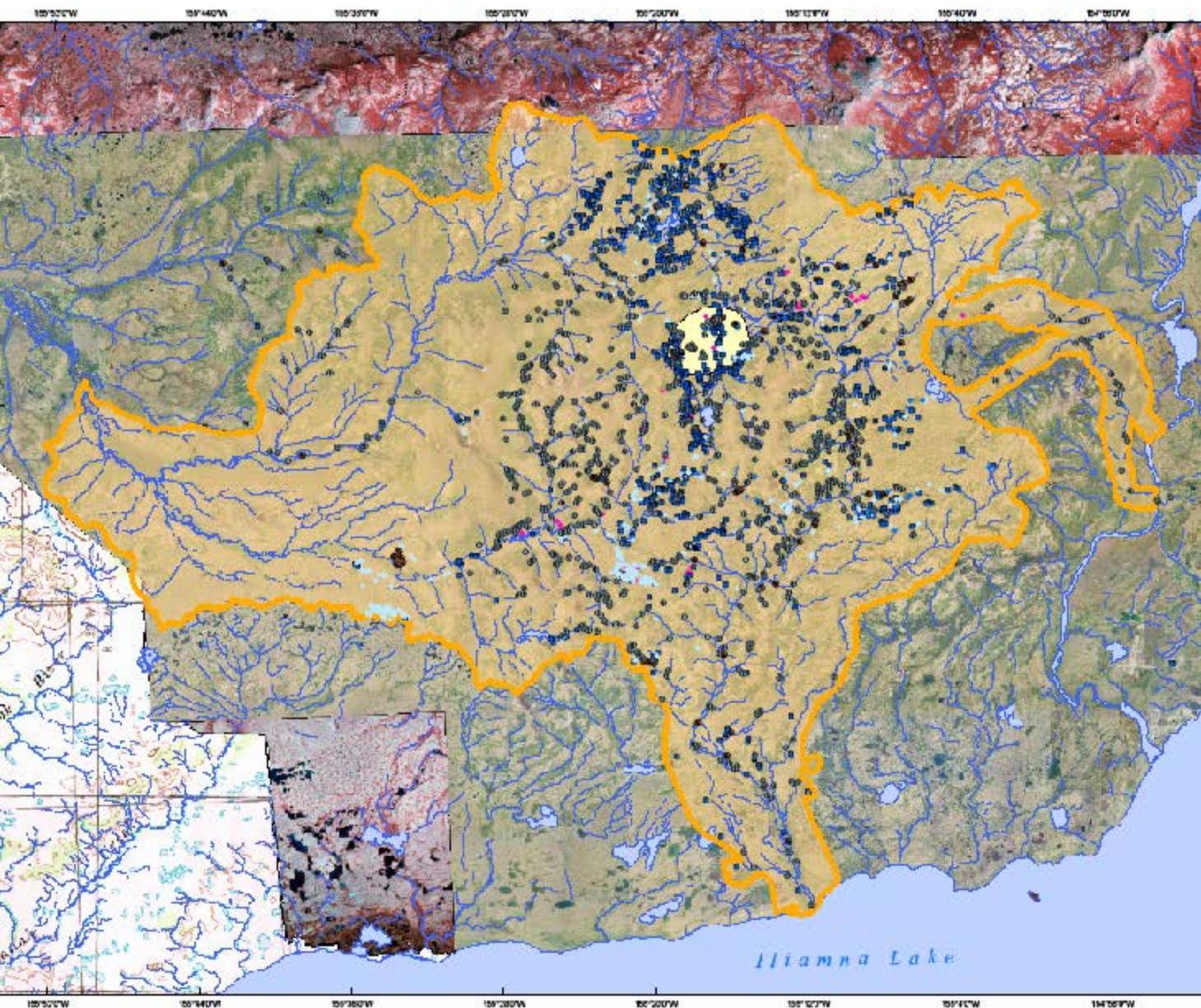
Dr. Mark Rains explains the focus of the Small Pools Study to a regional citizen's advisory group on a tour last August while Karyn Noyes looks on...

Our hypothesis is that pool electrical conductivity is controlled by water-rock interaction. If pool electrical conductivity is controlled by evaporation, then all conservative dissolved constituents (e.g., Na, K, Mg, Ca, Si, and Cl) should concentrate proportionally. If pool electrical conductivity is controlled by water-rock interaction, then conservative dissolved constituents commonly found in regional sediments (e.g., Na, K, Mg, Ca, and Si but not Cl) should concentrate preferentially. In order to evaluate this hypothesis, we will sample ~90 pools in each of the three basins and collect and analyze water samples according to the objectives listed above.



Three Parameters +

Natural Resource Consulting



Pebble Project NORTHERN DYNASTY MINES INC.

Three Parameters Plus, Inc. 2007 Stream Crossing and Waterbody Sample Locations

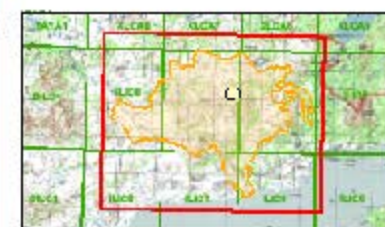
Legend **DRAFT**

- General Deposit Location
- 3PP 2007 Field Study Area

3PP Field Plots (10/30/07)

- WH (near point) (488)
- ◆ WB (lake) (63)
- WB (beaver back) (112)
- ◆ WH (near point) (411)
- ◆ WD (unknown) (52)
- ◆ Stream Crossings (1030)
- ◆ Small Pool Study Monitoring Well Locations (6)

WET CODE	SC	WB	Total Counts
Stream Crossings	1000	058	1058
WB (near point)		63	63
WB (lake)		112	112
WB (beaver back)		407	407
WB (unknown)		62	62
Small Pools		6	6
TOTAL COUNTS	1060	646	1706



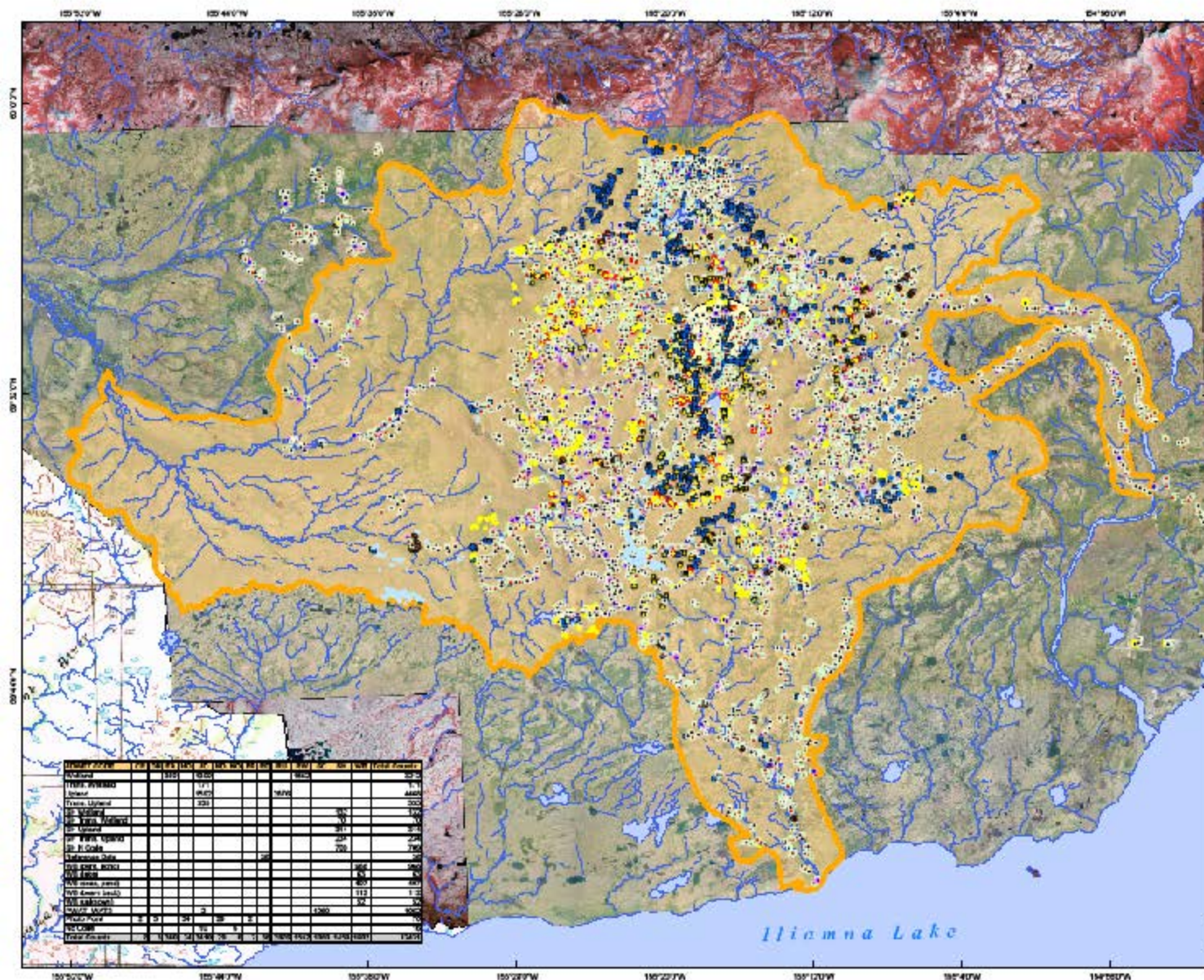
Scale 1:100,000
Alaska State Plane Zone 5 (in feet)
1983 North American Datum





Three Parameters +

Natural Resource Consulting



Pebble Project

NORTHERN DYNASTY MINES INC.

Three Parameters Plus, Inc.
2007 All Fieldplot Locations

DRAFT

Legend

- General Deposit Location
- 3PPI 2007 Field Study Area

3PPI Field Plots (103007)

- Wetlands (3212)
- Trans. Wetland (171)
- Uplands (4484)
- Trans. Upland (335)
- SH Wetland (132)
- SH Trans. Wetland (70)
- SH Upland (214)
- SH Trans. Upland (234)
- SH Upland (709)
- Reference Data (36)
- V/B (para. pond) (988)
- V/B (lake) (63)
- V/B (seas. pond) (407)
- V/B (beaver lake) (112)
- V/B (unknown) (62)
- VIAT: PIVAT (1067)
- Photo Point (107)
- No Code (16)



Scale: 1:100,000
Map data from 2007 (North 1987)
Map data from 2007 (North 1987)

FILE: R01_3PPI_SAAAP_0701001_11111_101_002004 DATE: November 11, 2007

Version: 2 EPA-9498-0000275 Author: BCL/LJW



Year	Jurisdictional Determinations	Shrub Height Rapid JDs	Functional Assessments	HGM Reference Data Point	Stream Crossing Photos	Waterbody Evaluations	Representative Upland Photos	Representative Wetland Photos	Habitat Observations	Dens	Photo Points	New Disturbance	Cultural Resources	NO CODE	Totals
2004															
Number of Plots	1182	0	0	0	307	39	420	313	14	3	0	2	1	245	2526
Number of Crew Field Days	188	0	0	0	126	25	132	136	14	3	0	2	1	28	665
Average Plots/Crew Field Day	6.287	0	0	0	2.436	1.56	3.181	2.301	1	1	0	1	1	8.75	3.856
Number of Pictures	3512	0	0	0	886	78	856	634	28	6	0	4	2	418	6424
2005															
Number of Plots	317	630	350	36	165	291	450	122	12	0	0	2	0	354	2729
Number of Crew Field Days	101	58	90	9	62	66	109	60	11	0	0	2	0	78	646
Average Plots/Crew Field Day	3.138	10.862	3.888	4	2.661	4.409	4.128	2.033	1.09	0	0	1	0	4.538	4.224
Number of Pictures	975	1876	1047	73	491	575	907	248	22	0	0	4	0	880	7098
2006															
Number of Plots	524	125	0	0	196	312	510	422	0	0	1	16	1	0	2107
Number of Crew Field Days	145	11	0	0	58	62	77	74	0	0	1	5	1	0	434
Average Plots/Crew Field Day	3.613	11.363	0	0	3.379	5.032	6.623	5.702	0	0	1	3.2	1	0	4.854
Number of Pictures	1562	367	0	0	580	619	1016	834	0	0	2	32	2	0	5014
2007															
Number of Plots	1355	698	3	0	387	955	1459	664	8	0	1	9	0	6	5545
Number of Crew Field Days	352	170	3	0	117	99	142	117	7	0	1	1	0	3	1012
Average Plots/Crew Field Day	3.849	4.105	1	0	3.307	9.646	10.274	5.675	1.142	0	1	9	0	2	5.479
Number of Pictures	4031	2079	9	0	1156	1899	2918	1329	14	0	2	18	0	11	13466
Summarize (2004 - 2007)															
Total Number of Plots	3378	1453	353	36	1055	1597	2839	1521	34	3	2	29	2	605	12907
Total Number of Crew Field Days	786	239	93	9	363	252	460	387	32	3	2	10	2	109	2747
Total Average Plots/Crew Field Day	4.297	6.079	3.795	4	2.906	6.337	6.171	3.93	1.062	1	1	2.9	1	5.55	4.698
Total Number of Pictures	10080	4322	1056	73	3113	3771	5697	3045	64	6	4	58	4	1309	32002



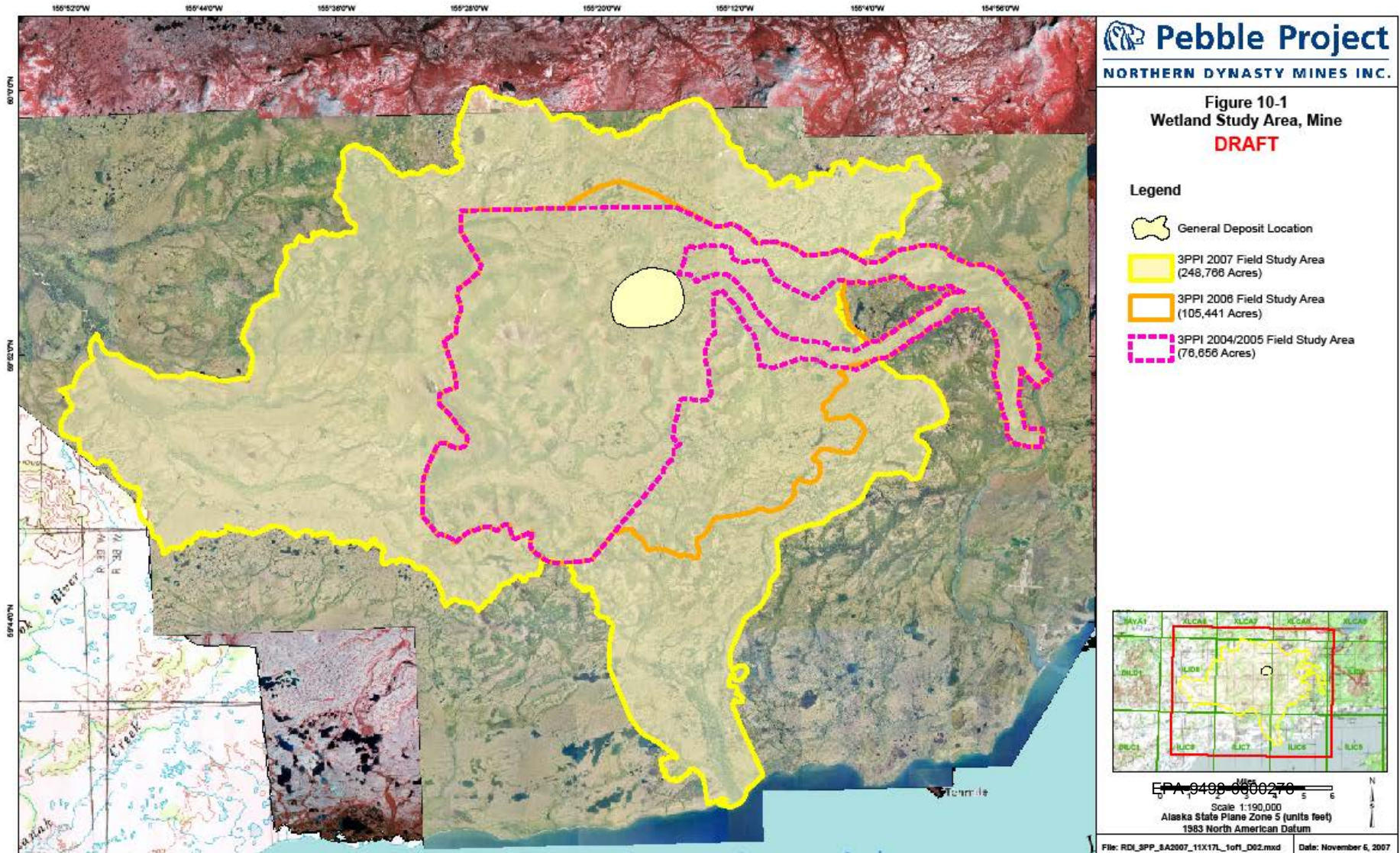
EPA-9498-0000276

Watershed Data Table

Watershed Code	CA	OR	WA	MT	ID	UT	WY	CO	NE	KS	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA	NY	CT	RI	MA	NH	VT	NJ	DE	MD	VA	NC	SC	GA	FL	AL	LA	MS	TX	OK	MO	IL	IN	OH	PA</
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[illegible]

Plot Density By Study Area Boundary





Field Data
Collection

Data
Validation

Line
Drawing ←

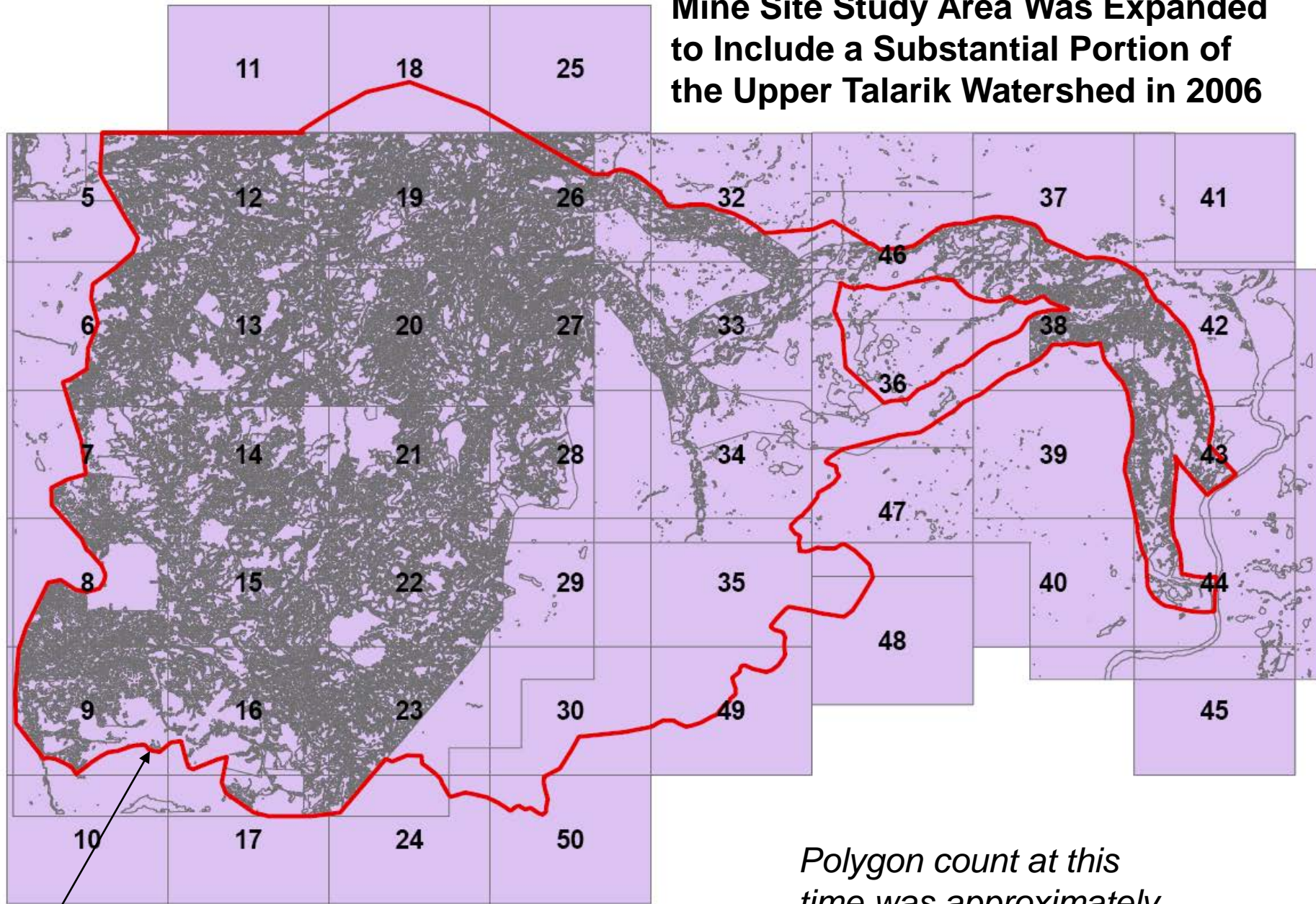
Polygon
Coding ←

Field
Review

Delineation

Wetlands and Other Waters of the U.S.

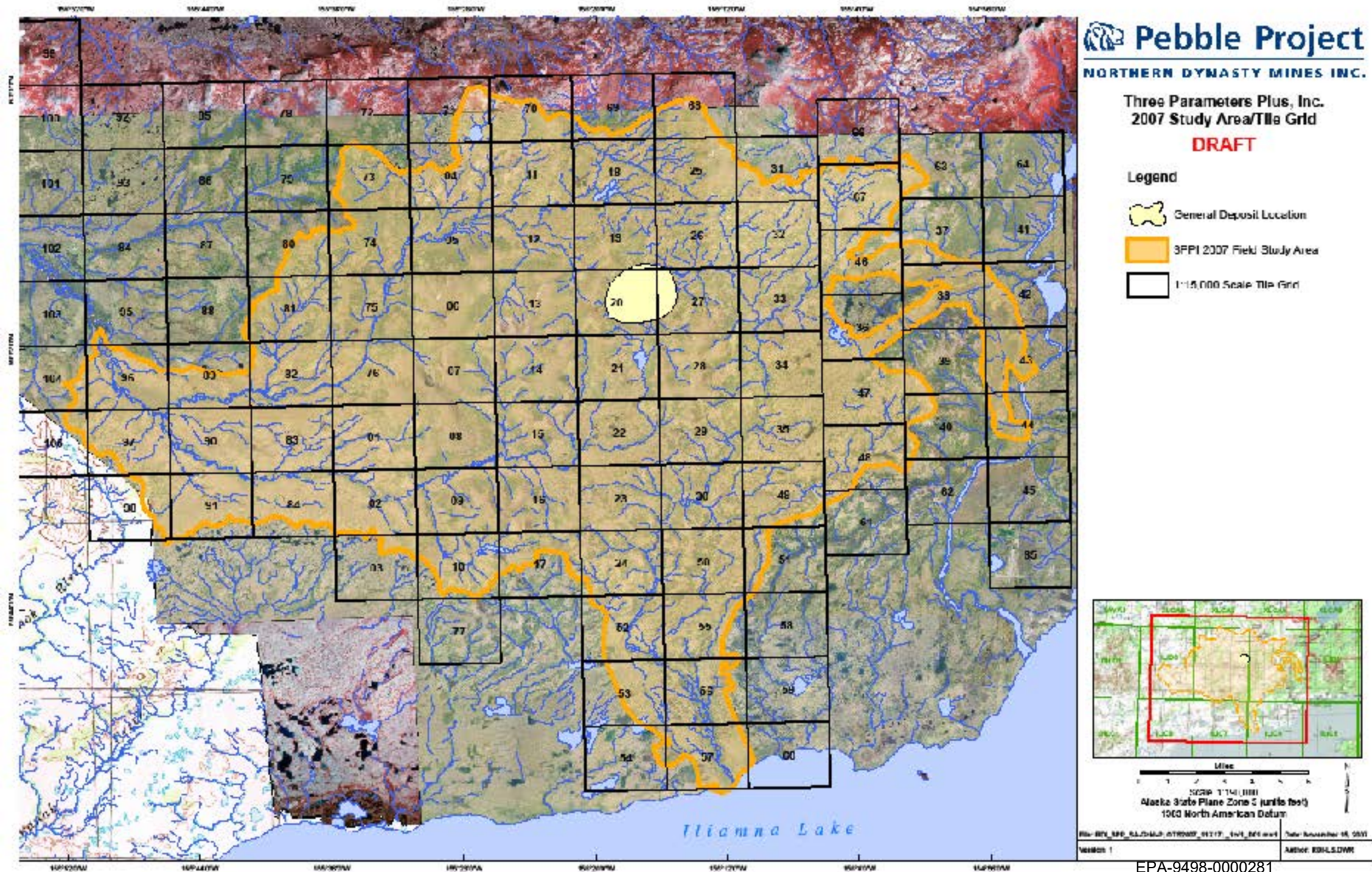
Mine Site Study Area Was Expanded to Include a Substantial Portion of the Upper Talarik Watershed in 2006



Red Study Area Boundary
= 104,069 Acres

*Polygon count at this
time was approximately
70,000*

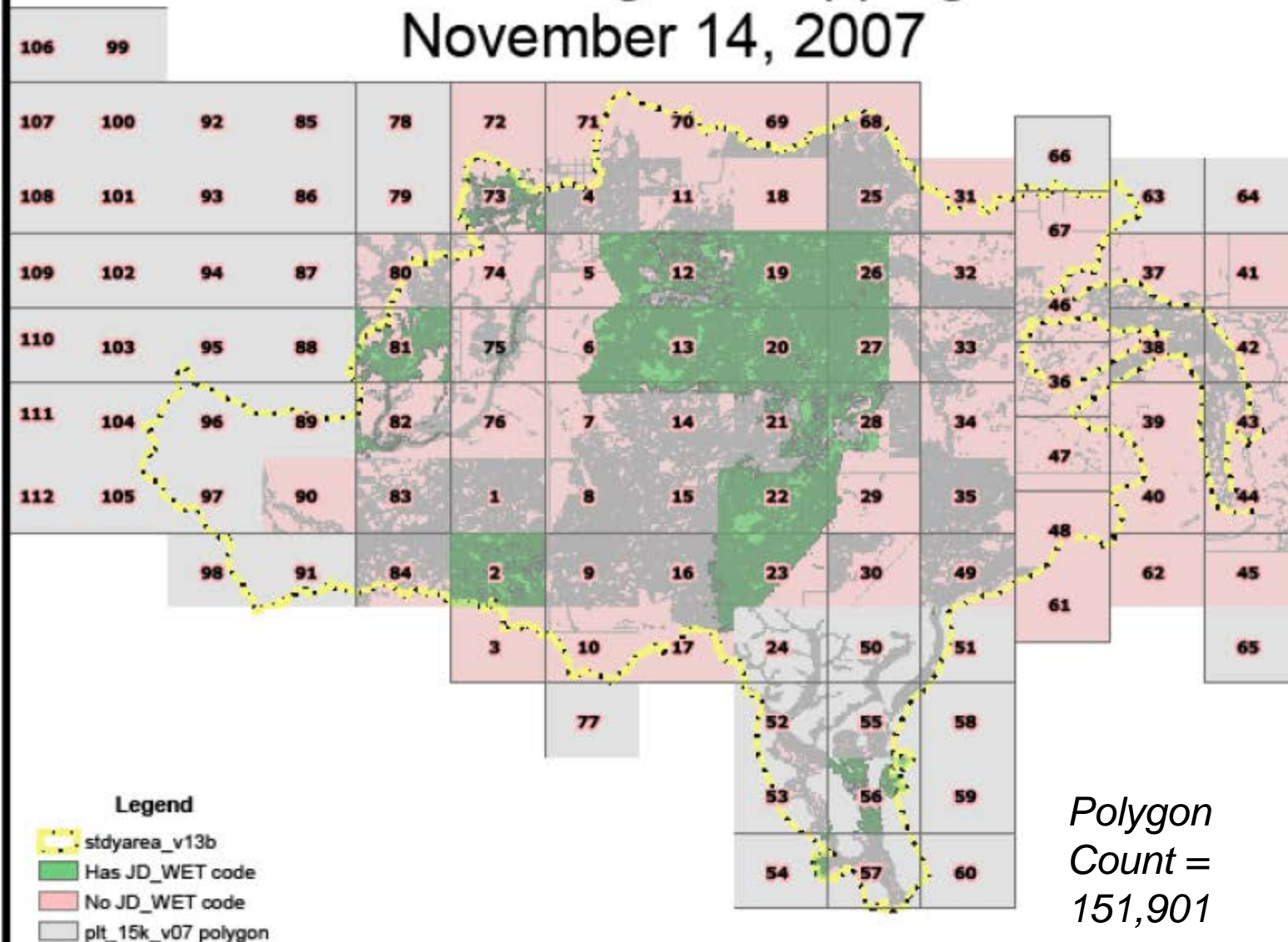
EPA-9498-0000280





Pebble - 3PPI Digital Mapping Status

November 14, 2007

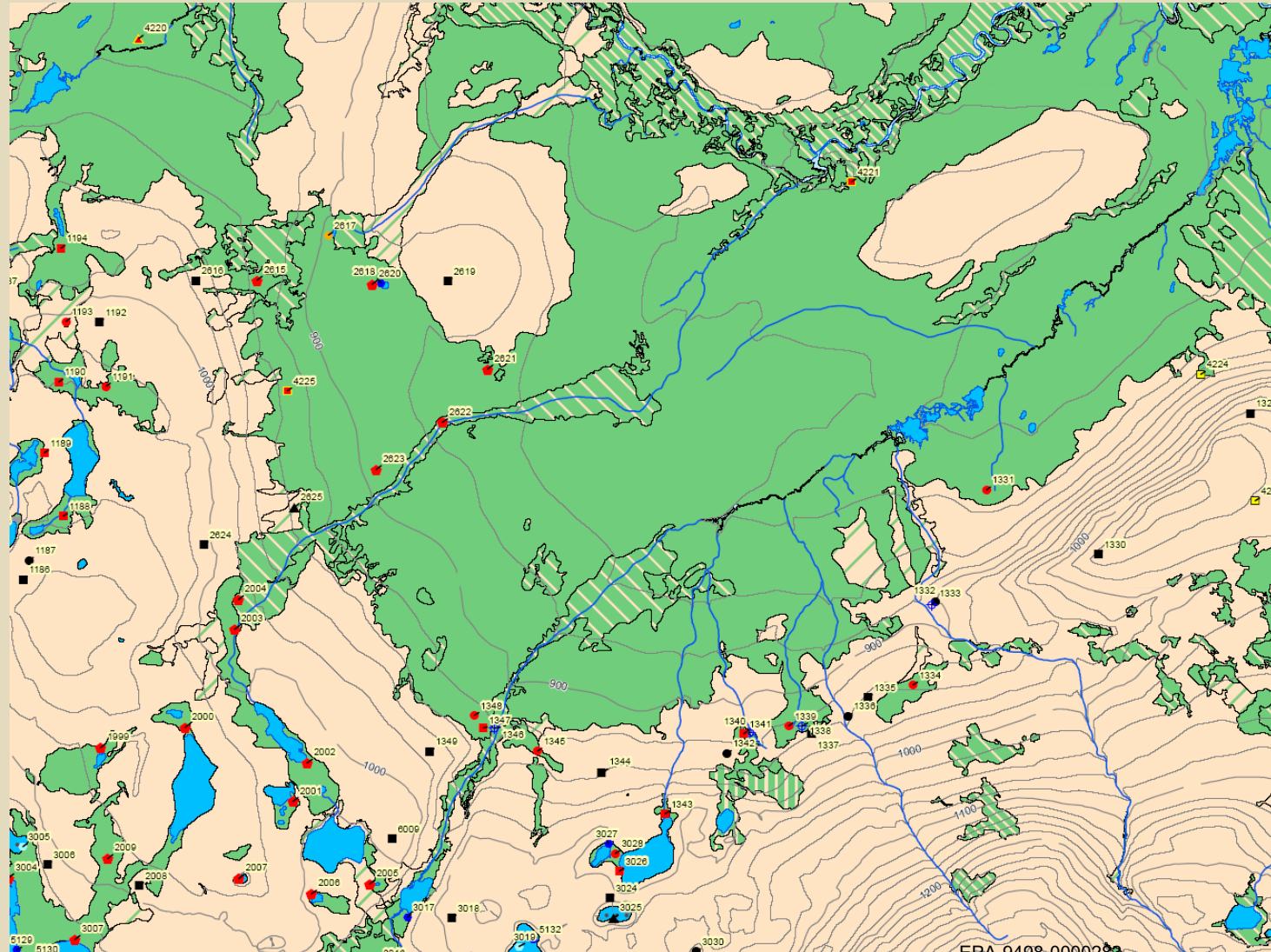




Sample Jurisdictional Wetland Mapping

The end result is mapping that will look this detailed, with a comparable sample point density (higher in some areas).

Known inlets and outlets will be clearly shown by arcs. The drainage type will ultimately be symbolized by different line patterns to differentiate perennial from intermittent streams.





Three Parameters +

Natural Resource Consulting

But Lots of Laughter & Just Plain Silly Behavior Make Most of Our Days Go By Too Quickly



EPA 9498-0000284



Major Study Components



Delineation

Based on Criteria and Indicators Found in the 1987 Corps Wetland Delineation Manual & 2006 Interim Regional Supplement for the Alaska Region.

Classify Wetlands and Assess Their Functions

Small Pools Study

Magee Rapid Procedure for Assessing Wetland Functional Capacity (HGM Based)

Consider Wetland Values

Incorporate Subsistence, Recreation, Cultural Resource, and Other “Values” into the Functional Assessment Evaluation

Identify & Evaluate Potential Compensatory Mitigation Projects

Prepare Compensatory Mitigation Plan

Per June 10, 2004 Final Alaska District Compensatory Mitigation Guidelines



Classify Wetlands and Assess Their Functions

Magee Holland's Rapid Procedure for Assessing Wetland Functional Capacity

Determine HGM
Classification

Collect Key Data
(Inlets/Outlets, pH)

Run Models Using
Field & Photo
Interpreted Data

Multiply Scores of
Potentially Impacted
Wetlands x Acres
Affected

Determine Debits by
Function



Magee Method Variables

- Wetland Size
- Ratio of Wetland Area to Watershed Area
- Juxtaposition
- Land Use/Intensity
- Soil Type
- Underlying Surficial Deposit
- Micro-Relief
- Water Regime
- Surface Water Fluctuation
- Overbank Flooding Frequency
- Sedimentation Evidence
- Basin Topography
- Inlets/Outlet Types
- Outlet Restrictions
- Water pH
- Piezometer Data (where available)
- Seeps & Springs
- Vegetation Types
- Vegetation Density/Dominance
- Interspersion
- Species Diversity
- Animal Food Plants
- Islands
- Woody Debris



New Database Process to Extrapolate Plant Community Type Summary Data to Plots with the Same Vegetation Type, HGM Class, and in the Same Watershed.

http://localhost/pebble/inc/Sections/WatershedExtrapolation/VegMain.aspx?w=50&v=40&h=2000.00

WetlandScrubZonePlotMain

Northern Dynasty Mines Inc. - Pebble Project

Home Document Repository Wetlands Logout

Extrapolating plot vegetation data will delete all non-extrapolated vegetation data from the selected plot type and insert/update newly extrapolated data based on Project Veg Type, Watershed, and where applicable, HGM Type.

The process may take a few minutes to complete.

Select Firm JPP

Select Plot Type RW

All Plots

- 3PF0003
- 3PF0075
- 3PF0087
- 3PF0097
- 3PF0098
- 3PF0114
- 3PF0121
- 3PF0124
- 3PF0127
- 3PF0131
- 3PF0145
- 3PF0159
- 3PF0160
- 3PF0176
- 3PF0178
- 3PF0180
- 3PF0181

Extrapolate Plot Vegetation Data

Three Parameters +

Natural Resource Consulting

When Extrapolated Data Are Used it Will Be Clearly Evident

WetlandFormOutMain

Routine Wetland Determination

Find Site:

Show Menu: ☐ Plot: 3PP12100 OC Status: Data Entry Complete

Find Plot: 3PP ☐ Type: 31 Status: NOU/00L

Save Plot Main Menu

Vegetation results have been extrapolated from other site specific observations made in the same Watershed and Project Veg Type (and HCM type, where applicable)

Acronym	Latin Name	Common Name	Stratum	Ind. Status	% Cover	Dom.	Height	Tree DBH	Magee Stratum	Animal Food	Subs. Food	Delete
BEPA SE	Betula papyrifera	Paper birch (seedling)	SAP	FACU	7	N			Shrub	Y	Food	
EAPL	Salix purpurea (formerly a. plan)	Diamond-leaf willow	S	FACW	77.2	Y		4	SS	Y	Medicine	
EAPN	Salix purpurea (a.)	Diamond-leaf willow	S	FACW	55	Y			SS	Y	Medicine	
EARA	Salix humayli	Ramsey willow	S	FAC	24	Y		4	SS	Y	Medicine	
EAAI	Salix arbusculoides	Little-leaf willow	S	FACW	20	Y			SS	Y	Medicine	
VAUL	Vaccinium uliginosum	Ug. blueberry	S	FAC	12.2	N			US	Y	Food	
LMRI	Limpetum nitidum	Black crowberry	S	FAC	11.0	N			US	Y	Food & Med	
VAMI	Vaccinium vitis-idaea	Mountain cranberry	S	FAC	10.0	N			DS	Y	Food & Med	
BEPA	Betula nana	Swamp birch	S	FAC	8.2	N			SS	Y	Food	
SACO	Salix humulata	Under green willow	S	FAC	8	N			SS		Medicine	
SVAL	Salix lasiolepis	Felt-leaf willow	S	FAC	7.7	N			TREE	Y	Medicine	
RTR	Ribes triale	Swamp red currant	S	FAC	6	N			SS	Y	Food	
ALSI	Alnus alnula	Sho. alder (shrub)	S	FAC	6	N			TS		Food	
SPFF	Spiraea heterophylla	Rose-hued spiraea	S	FAC	6	N			SS	Y		
PDF	Podium pinnatifidum	Narrow-leaf Labrador-tea	S	FACW	5	N			DS	N	Food & Med	
CAEA	Salix candida	Honey willow	S	QUL	4.6	N			SS		Medicine	
SAEL	Salix glauca	Gray-leaf willow	S	FAC	4	N			SS	Y	Medicine	
SAHL	Salix herbacea	Net-leaf willow	S	FAC	3	N			US	Y	Medicine	
SAHO	Salix hookeriana	Hooders willow	S	HL	3	N			SS	Y	Medicine	
VIED	Viburnum edule	Squashberry	S	FACU	7	N			SS	Y	Food & Med	
CAEA	Calamagrostis canadensis	Blue-joint reedgrass	H	FAC	32	Y			SH			
GYDR	Gymnocarpium dioica	Oak fern	H	FACU	31.3	Y			SH			
EQAR	Equisetum arvense	Field horsetail	H	FACU	28.3	Y			SH	Y	Food & Med	
EQPT	Equisetum pratense	Meadow horsetail	H	FACW	18.8	Y			SH	Y		
TRHY	Trisetum hyemale	Arctic sweet coltsfoot	H	HL	15	Y			SH		Medicine	
CAEA1	Salix candida	Canada birch	H	FACW	14	N			SH	Y	Medicine	

Page 1 of 1

Go to Next Tab

EPA-9498-0000289



Three Parameters +

Natural Resource Consulting

Results can then contribute to the plot's final JD status and the functional assessment.

Web-based Form Input

Routine Wetland Determination

Last Saved:

Show Menu: ☐ Plot: 5710-01 QC Status: Data Entry Complete

Final Plot: 3FF Go Type: Sh Notes: NOCODE

Site Location	Vegetation	CRYP-AK06	MORPH-AK06	IYD-07	IYD-AK06	Soil Profile	Other Soil	Determination	Assessment
MOSS	Moss sp.			Unkeyed moss		B	N/A	8.3	N
SPHA SP	Sphagnum sp.			Unkeyed sphagnum moss		B	N/A	5.8	N
LIVER SP	Liverwort sp.			Unkeyed liverwort		B	N/A	5	N
MUSH	Unkeyed mushroom			Unkeyed mushroom		B	N/A	7	N
LICHEN-S	Lichen sp.			Unkeyed lichen		B	N/A	7	N
CLUB	Cladonia dendroica			Cladonia dendroica		B	N/A	7	N
SPHAL	Sphaerophorus sp.					B	N/A	20	N

% of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): Calculated: 0% Calculate

VEGETATION REMARKS:

MISC. VEGETATION DATA:

Project Veg Type: Closed Willow Low Shrub

Field RAMP Veg Type: Closed Willow Low Shrub (F1)

Wetland Code: IC1B ABR Hab Code: Shrub

Field JD Wet Code:

Field EROS Veg. Type:

Field EUS:

Tree % (3) Method: 50/20 Stratum Proportion of Animal Food Plants (Calculated): 388.7

Proportion of Subsistence Food Plants (Calculated): 390

% BY STRATUM (MAGE - WETLANDS ONLY):

TREE - Canopy: 7.7 %	S/P - Sapling: 0 %	TS - Tall Shrub: 26 %
SS - Short Shrub: 197.6 %	OS - Dwarf Shrub: 42.8 %	TH - Tall Herb: 10.2 %
SH - Short Herb: 201.1 %	ML - Moss-Lichen: 80.0 %	F - Floating: 0 %
SM - Submerged: 0 %	Number of Layers: 1	

INDICATOR 1: PREVALENCE INDEX (AK2006)

Total % Cover of (A)	Multiplied by (B)
OBL Species:	x 1 =
FACW Species:	x 2 =
FAC Species:	x 3 =
FACU Species:	x 4 =
UPL Species:	x 5 =
Column Total:	

Prevalence Index = B/A = Calculated: 2.83

HYDROPHYTIC VEGETATION INDICATORS

2008 1987

Prevalence Index - Indicator 1

Wetland Cryptograms - Indicator 2

Morphological Adaptations - Indicator 3

Meets Requirements for Problematic Wetland Situation?

Hydrophytic Vegetation Present?

Plot 1 of 1

Go to Next Tab

EPA-9498-0000290



Consider Wetland Values

Incorporate Subsistence Use, Recreational Use, Cultural Resources, and Other Values into the Functional Assessment Process



Three Parameters +

Currently RDI is in the process of implementing a new data entry page in the wetlands application of the database that mimics the Alaska Natural Heritage Program Alaska Rare Species Site Survey Report.

ALASKA RARE SPECIES SITE SURVEY REPORT

rev. WXP-2005-09

SEND TO: ALASKA NATURAL HERITAGE PROGRAM, 707 A Street, Anchorage, AK 99510 (907) 267-2780

PLEASE ENTER ALL INFORMATION AVAILABLE TO YOU. USE THE BACK FOR COMMENTS IF NECESSARY. PLEASE INCLUDE GPS DATA, AND ATTACH PRECISE MAP.

☐ Data Sensitive?

Scientific name (no codes): _____
Surveyor (name and e-mail if any): _____ Phone: (____) _____

Address: _____
Date of Survey: _____ Borough: _____ Collection #: _____ Mammal: _____ Herb: _____

Geographic coordinates (NAD83 preferred, or NAD83, WGS84, or UTM): _____
Elevation (meters): _____
Location description (please include or attach GPS coordinates and a precise map, showing species boundaries, points, and other areas searched): _____

Map and/or GPS data estimated to depict true locations to within _____ m/ft on the ground, and/or _____ mm/in on paper map.
Map Name: _____ Field #: _____ R: _____ % of _____ % Sect.
Scale: _____ to _____ m/ft _____ R: _____ % of _____ % Sect.
Observed Area or Length (meters): _____ Last Manager: _____

Extent of occurrence (completeness): _____
Is this a new location record (Yes/No/Unknown)? _____
of individuals (mean): _____ census methods (if zero, reason): _____
of colonies / genets: _____ if different, explain: _____

Does this population occur naturally at this site? _____ Is this population re-introduced (Yes/No/Partially Unknown)? _____

Phenologic Stages (plants): _____ % dormant _____ % vegetative _____ % budding _____ % flowering _____ % fruiting _____ % seeding
Age Structure (all): _____ % senescent _____ % mature _____ % juvenile _____ % first-year _____ % newborn/seeding
Site Functions/Uses (animals): _____ breeding _____ foraging _____ wintering _____ roosting _____ denning _____ migrating _____ other

INTERACTIONS (disease, predation, competition, parasitism, symbiosis, pollination, hybridization, dispersal, etc.): _____

HABITAT DESCRIPTION (plant community, landform, dominant species, associates, other rare species, moisture, substrate/soils, aspect/slope, etc.): _____

CURRENT SITE USE / Visible Disturbances and Impacts / Possible Threats: _____

Overall Occurrence Quality: _____ Excellent _____ Good _____ Fair _____ Poor (consider size, viability, condition, and landscape context)
COMMENTS ON QUALITY: _____

OTHER COMMENTS: _____

IDENTIFICATION OF TAXON (Fill in all applicable blanks): ID is about _____ % certain.
Keyed in reference: _____
Compared w/photo/drawing in: _____
Compared with specimen at: _____
By another person (include below, name): _____
By personal knowledge (yes/no): _____
Other: _____

OTHER KNOWLEDGEABLE PEOPLE (Name / Address / Phone / E-mail): _____

Routine Wetland Determination

Last Saved: _____

Show Menu: ☐ PI

Find Plot: 3PP Ty

Site Location Vegetation CRYP-AK06 MORPH-AK06 HYD-87 HYD-AK06 Soil Profile Other Soil Determination

Completely Surveyed? ☐ Yes ☐ if No, about: _____ % of potential habitat surveyed. Species occupied _____ % of area/length

New Location Record? ☐ Yes ☐ Subsequent Visit? ☐ Yes ☐ Compared to last visit: ☐ More ☐

individuals/stems: _____ census methods: _____

colonies/genets: _____ if different, explain: _____

Does this population occur naturally at this site? ☐ Yes ☐ Is this population re-introduced? ☐ Yes ☐

Phenologic Stages: _____ % dormant _____ % vegetative _____ % budding _____ % flowering _____ % fruiting _____ % seeding

Age Structure (all): _____ % senescent _____ % mature _____ % juvenile _____ % first-year _____ % newborn/seeding

Site Functions/Uses (animals): ☐ Breeding ☐ Foraging ☐ Wintering ☐ Roosting ☐ Denning ☐ Digital _____ Other

Interactions (disease, predation, competition, parasitism, symbiosis, pollination, hybridization, dispersal, etc.): _____

Habitat Description (plant community, landform, dominant species, associates, other rare species, moisture, substrate/soils, aspect/slope, etc.): _____

Current Site Use / Visible Disturbances and Impacts / Possible Threats: _____

Overall Occurrence Quality: (consider size, viability, condition, and landscape context)

Comments on Quality: _____

Other Comments: _____

Identification of Taxon (Fill in all applicable fields): ID is about _____ % certain.

Keyed in reference: _____

Compared w/photo/drawing in: _____

Compared with specimen at: _____

By another person (include below, name): _____

By personal knowledge ☐ Yes ☐

Other: _____

Photographs (check all that apply)

Subject: _____ Type: _____
☐ Diagnostic Feature ☐ Digital
☐ Whole organism(s) ☐ Slide
☐ Habitat or site ☐ Print
Attached ☐ Yes ☐ Other
May we obtain copies at our cost? ☐ Yes ☐

Other Knowledgeable People

Name	Address	Phone	Email

Plot 2594 of 10377

<< previous 1 next >>

EPA-9493-0000292



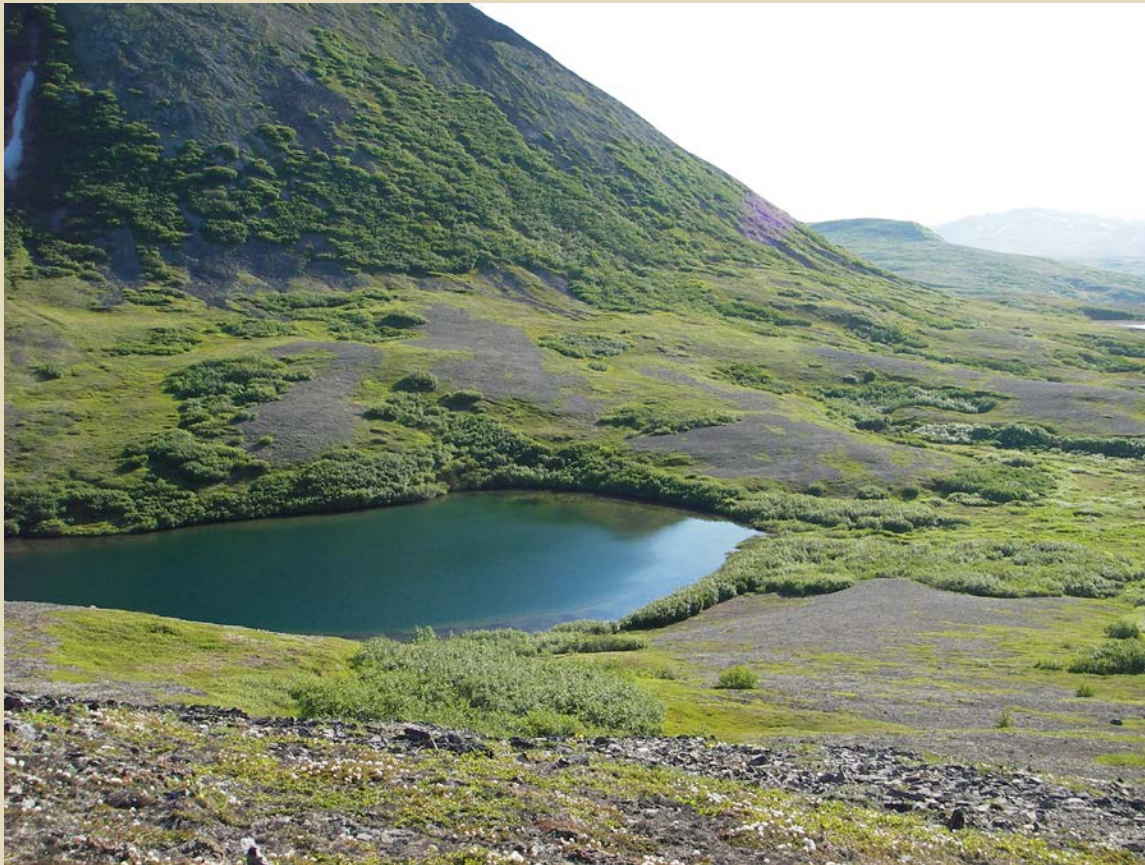
Mitigate =

Avoid

Minimize

Compensate ←

Identify Potential Compensatory Mitigation Opportunities



Mitigate =

Avoid

Minimize

Compensate ←

Prepare Compensatory Mitigation Plan

Per June 10, 2004 Final Alaska District Compensatory Mitigation Guidelines & Pending Rule Changes Published in the Federal Register this Summer

Major Study Components

-  **Delineation**
-  **Classify Wetlands & Assess Their Functions**
-  **Consider Wetland Values**
-  **Identify & Evaluate Potential Compensatory Mitigation Projects**
-  **Prepare Compensatory Mitigation Plan**



2008 Work Plan

(or as I like to say – let the madness continue...)

Mapping

Data Entry & QC

Lots More Field Work

*Continued Well Monitoring
for the Small Pools Study*

*Continue Review of
Abandoned Mine Files*

*HDR Will Prepare EBD
Access Corridor Sections*

*3PPI will Begin Drafting
EBD Sections for Mine
Site*